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IV. — *Numeral Corruptions in a Ninth Century Manuscript of Livy.*

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I WISH to lay before the Association some data which serve in a concrete way to throw light upon the character and extent of numeral corruptions in those of our classical Latin texts which depend, directly or indirectly, upon manuscripts of the ninth century. They are drawn from an important but somewhat neglected manuscript in the Vatican Library numbered *Codex Reginensis* 762. It contains, with considerable mutilations at the beginning and end, the third decade of Livy, but its readings find no place in the critical apparatus of the text editions for the reason that it is a copy of the famous *Puteanus* (Bib. Nat. Paris, 5730), which is the chief manuscript authority for that portion of Livy's text. On this account the *Reginensis* has been almost entirely neglected, although, from a purely palaeographical point of view, it possesses the highest interest, partly because so much is known concerning its history,¹ and partly by reason of the very fact which renders it valueless for the constitution of Livy's text, viz. : the accident that it is an existing copy of so early an original.

It is the product of the scriptorium of the famous calligraphic school of Alcuin at Tours which led the way in the revival of manuscript production under Charlemagne, a movement to which we owe the preservation of the majority of our classical Latin authors. It is thoroughly representative of the work of the school inasmuch as it is not the production of one scribe, but of eight, as is attested by their signatures at the foot of the various quaternions. The *Puteanus*, an

¹ See articles by Woelfflin in the *Philologus*, XXXIII, 1874, pp. 186-189, by Chatelain in the *Revue de Philologie*, Vol. XIV, 1890, p. 79 and in his *Paléographie des Classiques Latins*, 9^e livraison, 1893, and by L. Traube in the *Sitzungsberichte der Münchener Akademie der Wissenschaften*, 1891, heft 3, p. 425.

uncial manuscript of the fifth or sixth century, was taken to pieces and divided into eight parts, each of which was apportioned to a scribe, and the eight portions were in this way copied simultaneously. We have, therefore, in this manuscript the more or less concentrated efforts of the chief scriptorium in France at the time of the Caroline reform. What is more, owing to the lucky chance which has preserved the original used in making this copy, it is possible to test the quality of the work of that scriptorium by examining the eight samples of it preserved to us in this one manuscript. A comparison of this ninth century manuscript with its fifth century original clearly reveals every corruption which crept into the text of Livy in this one process of transcription through the carelessness or ignorance of the scribes, and, in the majority of cases, the exact cause of the misunderstanding which was the starting-point of the error. At the same time, it also reflects the general character of the manuscript work done in Western Europe during the first half of the ninth century not only at Tours, where this particular manuscript was copied, but in the other scriptoria of France as well, which were more or less directly under its influence. The errors to which the eight scribes of the *Reginensis* were prone illustrate, without doubt, the general tendencies to error among all the scribes of France under similar conditions and during the same period.

A detailed study of the scribal errors illustrated by a comparison of the readings of these two manuscripts will appear in the *American Journal of Archaeology* during the coming year. In this paper I shall deal with the numeral signs¹ only, which stand out as a class by themselves and are productive of a larger proportion of serious corruptions than any other cause. Indeed, the complaint of Bede (*Opp.* i. 149), 'numeri . . . negligenter describuntur et negligentius emendantur,' hardly prepares one for the somewhat wholesale corruption which took place in this one process of transcription, and that, too, in the most important scriptorium of the Caroline

¹ In the *Puteanus* a large proportion of the numbers is written out in full. With these we are not concerned, as they are productive of no corruptions.

period, the one which influenced the work of all the rest. My study covered in round terms about one-half of the portion copied by each of the eight scribes, an amount equal to about five books. Within that compass there are 31 cases of numeral corruption. Had the *Puteanus* been lost, and did the text of Livy depend upon the *Reginensis* in its uncorrected form, or some copy of it, it would be extremely difficult, in a fairly large number of cases, to restore the numerals thus corrupted.

In the examples, the *Puteanus* and the *Reginensis* will be indicated by P and R respectively.

(1) In the *Puteanus* the sign regularly used for thousand is ∞ . This symbol seems to have been entirely unfamiliar to these ninth century scribes, and to this cause is due fully one-half of the numeral corruptions in the following list. The possibility of error might have been avoided by copying the symbol as it stood, but four of the scribes, Aldo, Fredegaudus,¹ Ansoaldus, and Landemarus, made the absurd blunder of supposing that ∞ , from its form, must stand for x, even where the context showed that ten was entirely too small a number. For instance, the scribe Fredegaudus in xxiii, 37, 6, has transcribed correctly enough the number ∞ ccc, but only a page or two later, meeting with the symbol ∞ again (in xxiii, 40, 2), he imagined that he now knew what it meant, and wrote instead of the ∞ \overline{cc} , which he found in the *Puteanus*, the number x \overline{cc} . If he had exercised a moment's thought, he might have seen that it was not at all likely that ∞ was the symbol for 10, inasmuch as it was followed by \overline{cc} ; yet he continued to make the same mistake throughout his quota of the work, though once, being in doubt, he left a blank to be filled in by the corrector. Other examples of his treatment of the symbol are :

xxiii, 40, 4 ad $\infty \infty \infty$ sardorum eo proelio caesa P. Here Fredegaudus first wrote xxx. Then, feeling that 30 was too small

¹ Chatelain thinks that the scribe whose signature is Fredeğ is to be identified with Fridegisus, abbot of Tours and successor of Alcuin. In the longer article in the *American Journal of Archaeology* I shall give my reasons for expanding it, with Traube, as Fredegaudus.

a number, he drew a horizontal stroke above it, thus, $\overline{\text{xxx}}$. In this way the original 3000 becomes first 30, and then 30,000.

xxiii, 49, 11 paulo minus ∞ equorum P. In R a corrector has written ∞ in the erasure of what was probably x.

xxiii, 40, 5 $\overline{\text{m}}$ ualerius $\infty \infty$ praesidioque P. Here the scribe left a blank space, in which the numeral was written by a corrector.

xxiii, 40, 8 facturum se que (= quae) uellent pollicitus, $\infty \infty$ delectorum militum nauibus longis mittit P. The number as it now stands in R is ∞ *delectorum militum*, but the ∞ is written by a corrector in an erasure of what was probably xx. It is to be noted that the correction is also wrong, and that the scribe has returned to writing x for ∞ .

The above examples from the work of Fredegaudus I have given first, not because they are the most numerous, but because they illustrate the workings of his mind with regard to the symbol. There are four stages to his treatment of the symbol: (1) he does not know what it means, but writes it as it is in P; (2) he imagines that it stands for x and writes it accordingly; (3) he is in doubt and leaves a blank; (4) he resumes the writing of x.

Examples of the error from the work of the other scribes are:

xxvii, 38, 11 equitum ∞ P. This the scribe of R copied correctly, but changed his mind, erased the ∞ , and wrote x in its place.

xxvii, 38, 12 et sagittariorum funditorumque ad $\infty \infty \infty$ P, et sagittariorum funditorumque ad xxx R. This a corrector has altered to $\overline{\infty} \overline{\infty} \overline{\infty}$.

xxvii, 43, 11 sex millia peditum ∞ equites P, sex millia peditum x equites R.

xxviii, 2, 4 erant in celtibero exercitu $\infty \infty \infty \infty$ scutata P, erant in celtibero exercitu xxx *scuta* R.

xxviii, 34, 2 uulnerata amplius $\infty \infty \infty$ hominum P, uulnerata amplius xxx hominum R. In this and in other cases the genitive after the numeral does not seem to have troubled the scribe.

xxviii, 36, 9 supra $\infty \infty \infty \infty$ armatorum P, supra xxx armatorum R.

xxii, 41, 2 ad ∞ et dcc caesi P. A corrector in R has written *m*. over an erasure of what was probably x.

xxii, 7, 3 is a possible example of this confusion. P has $\infty \infty$ d hostium in acie periery. In R there is an erasure before the d in

which a late corrector has written *m*. The erased letters were probably *xx*, as the work of the scribe Aldo shows other cases of this confusion. There is a possibility, however, that the letters were $\infty \infty$, and that the correction was a deliberate one, made with the purpose of bringing Livy into harmony with Polybius, who gives 1500 as the number.

In the two examples which follow, as well as in the second example from the work of Fredegaudus, this confusion of *x* and ∞ is responsible for a further increment of corruption.

xxvii, 40, 11 ad $\infty \infty \infty \infty$ hominum P, ad *triginta milium* hominum R. Here the scribe has made a triple error. He interpreted the $\infty \infty \infty \infty$ as *xxxx*. Then, being in the habit of writing *xl* for 40, he supposed that the fourth ∞ was a scribal error and that 30 was the number. Feeling that the passage demanded a larger number than 30 he wrote *ad triginta milium hominum*, and the 4000 of Livy has become 30,000.

xxiii, 13, 7 ut hannibali $\infty \infty | \infty \infty$ numidarum in supplementum mitterentur P. R has *xl* numidarum. The scribe supposed that the number was *xxxx*, and was in the habit of writing *xl* for 40. As in the preceding example, the clue for emendation is practically lost.

(2) The symbol for 1000 with which the scribes were familiar was *M*. Consequently the scribes Theogrimmus and Theodegrimmus sometimes write *mille* for *M*., the abbreviation for *Marcus*, and a number is thereby created where none had existed.

xxvi, 21, 13 id \bar{m} cornelio mandatum P, id *mille* cornelio mandatum R. To the scribe, if he took the trouble to translate, this must have meant: 'This thousand was entrusted to Cornelius.'

xxvi, 21, 17 inter has difficultates *m* cornelius PR (= praetor) et militum animos etc. P, inter has difficultates *mille* cornelius populus romanus et militum animos R. That the scribe had little idea of the sense is shown by *populus romanus*, but if he concerned himself with the meaning at all he must have taken it to mean something like this: 'amid these thousand difficulties.'

xxvi, 22, 12 duobus plenis iam honorum que fabio et \bar{m} marcello P, que fabio et *mille* marcello R.

xxvi, 21, 5 ut \bar{m} . marco marcello (marco marcello P², deleting \bar{m} .) quo die urbe ouans iniret, imperium esset P, *mille* marco marcello R.

The scribe has not only produced an utter absurdity, but has gone out of his way to do so by disregarding the correction in P.

xxvii, 40, 10 ad p. tolomaeum (= ad Ptolomaeum) et cleopatram reges \bar{m} atilius et \bar{m} acilius legati P, ad populum tolomaeum et cleopatram reges \bar{m} atilius et *milia* acilius legati R. Here the scribe arbitrarily left one \bar{m} as it was and wrote *milia* for the other.

These errors were all corrected while P was still accessible, and are so absurd that if P had been lost altogether they would, if not carried further, have presented no difficulty whatever to a modern critic. But these blunders would surely have grown in passing through the hands of later copyists, to whom it would be a great temptation, on finding these numbers standing alone, to add a noun to indicate the thing numbered.

(3) The symbol ϕ for 500 also gave rise to an important class of corruptions in R. In order to distinguish the numeral sign from the letter D, a stroke is regularly drawn through it in P. Unfortunately an oblique line was drawn in the same way by the correctors in P through letters which they wished to strike out, and some of the scribes of R, supposing that this was the purpose of the oblique stroke through the D, have omitted the symbol for 500 altogether.¹

xxiii, 16, 15 $\bar{\pi}$ et ϕ ccc hostium caesos non plus ϕ romanorum amississet (amissis et *Luchs*) P, $\bar{\pi}$ et ccc hostium caesos non plus romanorum amississet R. The number of the enemy's killed has thus decreased from 2800 to 2300, and the number of the Roman dead has disappeared altogether.

xxiii, 19, 17 ex ϕ LXX qui in praesidio fuerunt P, ex LXX qui in praesidio fuerunt R, a reduction from 570 to 70. The scribe added the ϕ at a later time.

xxiii, 17, 8 casilinum eo tempore ϕ praenestini habebant P. ϕ was omitted by Aldo, and R first read *casilinum eo tempore praenestini habebant*, though the ϕ was inserted at a later time.

xxvii, 41, 8 circa ϕ romanorum sociorumque uictores ceciderunt P. The number has entirely disappeared in R.

¹ Even as early as the copying of P in the fifth or sixth century the omission of D was not unusual, as is shown by its occasional omission in P.

The scribe Fredegaudus seems to have regarded this as a blunder to be carefully guarded against, and in xxiii, 43, 8 where P¹ has *nolandos*, which was corrected to *nolanos* by P² by drawing a line through the ϕ (thus NOLAN ϕ OS), this scribe wrote *nolan ϕ os*, probably because he had been cautioned against omitting this symbol, a precaution which shows how great a tendency there was to errors of this kind.

(4) Another source of error in connection with the numerals was the difference in practice in the fifth century and the ninth with regard to the symbols for 40. In the *Puteanus* the symbol is regularly xxxx. In the ninth century the form XL seems to have been the more familiar one. Consequently there is a slight tendency on the part of the scribes to suppose that xxxx is a mistake, and that xxx was the number intended. Thus in xxvii, 40, 11 the scribe in R wrote xxx for $\infty \infty \infty \infty$, supposing that ∞ was x. In xxvii, 8, 13 *quattuor milia cccxxxxiv*, though written correctly by the scribe, has become in the hands of a corrector, who erased one x, *quattuor milia cccxxvi*. And in xxiii, 37, 11 *signa militaria ad xxxxi cepit* P, became in the hands of the scribe xxxi, though a corrector has since emended to xli.

One would expect to find the same confusion in the case of viiii for 9, but of this I have found no examples.

Manuals on textual emendation have little to say on the subject of the numerals, and the illustrations which they give deal for the most part with corruptions caused by the confusion of the numeral signs with letters of the alphabet, the numeral thereby becoming part of a word. Of this variety of error I have found but two examples :

xxviii, 36, 9 paulo minus ccc ui/ui capti P. Here the word *uiui* is divided in P by the end of a page, one half being at the bottom of one page, the other at the top of the next. In consequence, Landemarus supposed that the first *ui* was part of the numeral and wrote cccvi *ui capti*.

xxii, 37, 5 *uictoriam auream pondo ducentum ac uiginti* is the reading of Luchs. P has *uictoriam auream p. cc ac xx*. For this the scribe in R wrote *uictoriam auream picca cxx*. This absurdity is

now emended in R to $\overline{p}.cccxx$, the *a* of *ac* being omitted and the *c* added to the numeral, thereby increasing it 100 pounds.

From the paucity of examples, it would seem that this was not a class of error to which the scribes of the *Reginensis* were prone, and the actual corruption due to this cause is slight when compared with the other classes already indicated. The same may be said of the errors arising from the two uses of the horizontal stroke which was drawn above the numerals, sometimes to indicate thousands, and sometimes simply to indicate a numeral. I have found no errors from this cause in R, for the reason that where the horizontal stroke was already in P it was usually reproduced in R, or if omitted, omitted intelligently.

To make the list of numeral corruptions complete I shall give one more. In xxviii, 38, 8 P reads *ludi romani biduum instaurati*. Here the scribe Landemarus wrote *ludi romani x duū instaurati*. His reason for writing *x duū* is difficult to see. He may have thought that *-duum* meant 2 in combination with a preceding number, and then guessed that the first part meant 10.

It will be seen from the above examples that the great majority of the numeral corruptions involve the larger numbers. Of a total of 31 examples there are 15 in which *x* is written for ∞ . If we include the 5 examples in which *mille* was written for *M.*, the abbreviation for *Marcus*, — which, however, as they occur in the work of but two scribes must not be regarded as a common species of error, — we have 21 examples, or two-thirds of the total number, involving thousands. Adding the examples of the omission of \overline{p} , we have a total of 25 cases of numeral corruptions involving errors of 500 or more. The total number of numeral corruptions due to all other causes amounts to but 6. The smallest class is that to which books on textual criticism give the most attention.

The havoc made with the numerals in this one process of transcription goes to show how little reliance can be placed

upon the accuracy of the numerals in the texts of classical Latin writers which are based only upon manuscripts of the ninth century or later. The chief cause of error in the *Reginensis* is the lack of familiarity on the part of the ninth century scribe with the signs of notation in vogue in the fifth and sixth centuries. This same cause was operative in the case of practically all the copies of classical Latin authors made in the ninth century. Owing to the almost total inactivity in the production of manuscripts of the Pagan Latin writers, which lasted from the end of the sixth century to the end of the eighth, few of the manuscripts employed in making copies of the works of those writers can have belonged to a period later than the sixth century. The signs of notation would therefore be, for the most part, the same as those of the *Puteanus*. Inasmuch, then, as the *Reginensis* is a normal type of ninth century manuscript and the *Puteanus* a normal type of the manuscript employed by the ninth century scribes in making copies of the works of the classical Latin writers, it is probable that errors of the same nature as the above continued to be made until experience had given the scribes more familiarity with the notation of the older time.

Most of the errors in the *Reginensis* passed through the hands of a corrector. But such supervision was not extended to all the manuscripts of the period, as is shown by some interesting corruptions preserved in the Codex *Bambergensis* (M. IV. 9), an eleventh century descendant of the *Puteanus*. The loss of the last few pages of both the *Puteanus* and the *Reginensis* raises it, together with another eleventh century manuscript, the *Colbertinus*, to the dignity of a manuscript authority for a few of the concluding chapters in Book xxx. In its readings, as given in the critical edition of Luchs, there occur the following numeral corruptions :¹

xxx, 35, 3 mille et quingenti] ∞ et D *Colbertinus*, x & *Bambergensis* (omitting D).

¹ The examples are drawn from Book xxx, chaps. 30, 11 to 42, 21. From xxx, 42, 21 to the end of the book the text of the *Bambergensis* is not drawn from the *Puteanus*, but from some other source.

xxx, 36, 8 mille et ducenti]. B has x for mille.

xxx, 36, 8 mille et quingenti] ∞ & D *Colbertinus*, x et (omitting D) B.

xxx, 42, 6 quattuor millibus]. Here B has simply XL.

These corruptions are identical in character with the two most important classes in the *Reginensis*. There are four examples of the writing of x for ∞ , and two of the omission of ϕ . They all occur within a compass of seven chapters at the very end of the manuscript and of the decade. This goes to show that the scribe originally responsible for the errors had not discovered the meaning of these symbols before reaching the end of his task, and had acquired the habit of writing x for ∞ and of omitting ϕ without further question. It is not improbable that these errors had their source in some other copy of the *Puteanus*, produced under conditions similar to those of the *Reginensis*, but which had not been so carefully revised. At any rate, the presence of these corruptions in this eleventh century manuscript helps to confirm the impression that manuscripts of the ninth century or later, however trustworthy in other respects, can not be trusted in their record of numbers until that record is corroborated from some independent source.